Format No: CP/TF/01

## TEST REPORT ON COARSE AGGREGATES

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2018-03-28-09** **Date: 31-03-18** |
| **Customer** | : | Assistant Executive Engineer, Dasarahalli Sub Division, BBMP, Bangalore. |
| **Address** | : | Dasarahalli Sub Division, BBMP, Bangalore. |
| **Project Name** | : | Improvements to CC road and drain at 10th Cross and other cross road Bagalagunte main road in ward No.14, Bagalagunte. |
| **Agency** | : | Technical Manager (West), KRIDL, Project Implementation unit, No.280, 59th Cross, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore. |
| **Customer's Reference** | : | BBMP/EE/DD/WO/361/17-18 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample condition** | : | Satisfactory |
| **Date of Receipt** | : | 28-03-18 |
| **Sample ID No** | : | 2018-03-28-09 /02(a) |
| **Sample Type** | : | 40mm down size coarse aggregate |
| **Reference to BIS codes** | : | IS: 383:2016 (Specification for Coarse and fine Aggregates )<br>IS: 2386 :1963(Part - 1,3,4) RA2011<br>IS 2386 Part 1: Particle Size and Shape<br>IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption<br>IS 2386 Part 4: Mechanical Properties |
| **Date of test** | : | 28-03-18 |

**SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:**

**Total weight taken** : **15000** **grams**

| Sample No. | Sieve No. | Weight Retained in gms | Cumulative Weight Retained in gms | % Cumulative Weight Retained | % Passing | Required as per IS 383:2016 |
|---|---|---|---|---|---|---|
| 1 | 80 mm | 0 | 0 | 0.0 | 100 | 100 |
| 2 | 40 mm | 238 | 238 | 1.6 | 98.4 | 90-100 |
| 3 | 20 mm | 7182 | 7420 | 49.5 | 50.5 | 30-70 |
| 4 | 10 mm | 5140 | 12560 | 83.7 | 16.3 | 10-35 |
| 5 | 4.75 mm | 2085 | 14645 | 97.6 | 2.4 | 0-5 |
| 6 | Pan | 355 | 15000 | 100.0 | 0 | --- |



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## TEST REPORT ON COARSE AGGREGATES

**Lab ID** : **CP-2018-03-28-09** **Date: 31-03-18**

**Sample ID No** : 2018-03-28-09 /02(a)

**PHYSICAL PROPERTIES**

| Sl.no | Tests | Result | Requirements as per IS:383-2016 |
|---|---|---|---|
| 1 | Flakiness Index(%) | 10.1 | Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate |
| 2 | Elongation Index(%) | 9.3 | |
| 3 | Specific Gravity | 2.61 | – |
| 4 | Bulk Density(Loose) (Kg/l) | 1.47 | – |
| 5 | Bulk Density(Compacted) (Kg/l) | 1..52 | – |
| 6 | Water Absorption(%) | 0.15 | – |

**Note:**

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**R KARTHIK RECHAN**
Authorized Signatory
**Quality Manager**



****End of Report****

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## TEST REPORT ON COARSE AGGREGATES

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2018-03-28-09** **Date: 31-03-18** |
| **Customer** | : | Assistant Executive Engineer, Dasarahalli Sub Division, BBMP, Bangalore. |
| **Address** | : | Dasarahalli Sub Division, BBMP, Bangalore. |
| **Project Name** | : | Improvements to CC road and drain at 10th Cross and other cross road Bagalagunte main road in ward No.14, Bagalagunte. |
| **Agency** | : | Technical Manager (West), KRIDL, Project Implementation unit, No.280, 59th Cross, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore. |
| **Customer Reference** | : | BBMP/EE/DD/WO/361/17-18 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 28-03-18 |
| **Sample ID No** | : | 2018-03-28-09 /02(b) |
| **Sample Type/ Size** | : | 20mm down size coarse aggregate |
| **Reference to BIS codes** | : | IS: 383:2016 (Specification for Coarse and fine Aggregates )<br>IS: 2386 :1963(Part - 1,3,4) RA2011<br>IS 2386 Part 1: Particle Size and Shape<br>IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption<br>IS 2386 Part 4: Mechanical Properties |
| **Date of test** | : | 28-03-18 |

**SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:**

**Total weight taken : 5000 grams**

| Sample No. | Sieve No. | Weight Retained in gms | Cumulative Weight Retained in gms | % Cumulative Weight Retained | % Passing | Required as per IS 383:2016 |
|---|---|---|---|---|---|---|
| 1 | 40 mm | 0 | 0 | 0 | 100 | 100 |
| 2 | 20 mm | 321 | 321 | 6.4 | 93.6 | 90-100 |
| 3 | 10 mm | 3015 | 3336 | 66.7 | 33.3 | 25-55 |
| 4 | 4.75 mm | 1403 | 4739 | 94.8 | 5.2 | 0-10 |
| 5 | Pan | 261 | 5000 | 100 | 0 | – |



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## TEST REPORT ON COARSE AGGREGATES

**Lab ID** : **CP-2018-03-28-09** **Date: 31-03-18**

**Sample ID No** : 2018-03-28-09 /02(b)

### PHYSICAL PROPERTIES

| Sl.no | Tests | Result | Requirements as per IS:383-2016 |
|---|---|---|---|
| 1 | Flakiness Index(%) | 11.9 | Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate |
| 2 | Elongation Index(%) | 10.5 | |
| 3 | Specific Gravity | 2.63 | – |
| 4 | Bulk Density(Loose) (Kg/l) | 1.51 | – |
| 5 | Bulk Density(Compacted) (Kg/l) | 1.55 | – |
| 6 | Water Absorption(%) | 0.23 | – |
| 7 | Aggregate crushing Value(%) | 23.1 | Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface. |
| 8 | Aggregate Impact Value(%) | 23.8 | 30% for Aggregates to be used in concrete for wearing Surface, 45% for Aggregates to be used in concrete other than for wearing Surface. |

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**R KARTHIK RECHAN**
Authorized Signature
**Quality Manager**



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# TEST REPORT OF FINE AGGREGATE

**Lab ID** : **CP-2018-03-28-09** **Date: 31-03-18**

**Customer** : Assistant Executive Engineer, Dasarahalli Sub Division, BBMP, Bangalore.

**Address** : Dasarahalli Sub Division, BBMP, Bangalore.

**Project Name** : Improvements to CC road and drain at 10th Cross and other cross road Bagalagunte main road in ward No.14, Bagalagunte.

**Agency** : Technical Manager (West), KRIDL, Project Implementation unit, No.280, 59th Cross, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore.

**Customer's Reference** : BBMP/EE/DD/WO/361/17-18

**Source of Sample** : Sample supplied by Agency

**Sample Condition** : Satisfactory

**Date of Receipt** : 28-03-18

**Sample ID No** : 2018-03-28-09 /03

**Sample Type** : Fine Aggregate

**Reference to BIS codes** : IS 383 : 2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1, 3) RA2012
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption

**Date of test** : 28-03-18

**Total weight taken** : 1000 grams

| Sl.no | Sieve Size | Weight Retained (gms) | Cumulative Weight Retained (gms) | % Cumulative Weight Retained | % Passing | Requirement as per IS 383:2016 | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Grading Zone I | Grading Zone II | Grading Zone III | Grading Zone IV |
| 1 | 10 mm | 0 | 0 | 0.0 | 100.0 | 100 | 100 | 100 | 100 |
| 2 | 4.75 mm | 29 | 29 | 2.9 | 97.1 | 90-100 | 90-100 | 90-100 | 95-100 |
| 3 | 2.36 mm | 185 | 214 | 21.4 | 78.6 | 60-95 | 75-100 | 85-100 | 95-100 |
| 4 | 1.18 mm | 202 | 416 | 41.6 | 58.4 | 30-70 | 55-90 | 75-100 | 90-100 |
| 5 | 600 micron | 193 | 609 | 60.9 | 39.1 | 15-34 | 35-59 | 60-79 | 80-100 |
| 6 | 300 micron | 154 | 763 | 76.3 | 23.7 | 5-20 | 8-30 | 12-40 | 15-50 |
| 7 | 150 micron | 171 | 934 | 93.4 | 6.6 | 0-10 | 0-10 | 0-10 | 0-15 |
| 8 | Pan | 66 | 1000 | 100.0 | 0.0 | --- | --- | --- | --- |

**Result :The tested Sample Conforms to Grading Zone II**



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# TEST REPORT OF FINE AGGREGATE

**Lab ID** : **CP-2018-03-28-09** **Date: 31-03-18**

**Sample ID No** : 2018-03-28-09 /03

**PHYSICAL PROPERTIES**

| Sl.no | Tests | Result | Requirements as per IS 383:2016 |
|---|---|---|---|
| 1 | Water Absorption(%) | 1.53 | – |
| 2 | Specific Gravity | 2.54 | – |
| 3 | Material finer than 75 micron(%) | 5.1 | Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10% |

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**R KARTHIK RECHAN**
Authorized Signatory
**Quality Manager**


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# TEST REPORT OF CEMENT CONCRETE CUBES

**Lab ID** : **CP-2018-04-05-07** **Date: 09/04/2018**

**Customer** : Assistant Executive Engineer, Dasarahalli Sub Division, BBMP, Bangalore.

**Address** : Dasarahalli Sub Division, BBMP, Bangalore.

**Project Name** : Improvements to CC road and drain at 10th Cross and other cross road Bagalagunte main road in ward No.14, Bagalagunte.

**Agency** : Technical Manager (West), KRIDL, Project Implementation unit, No.280, 59th Cross, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore.

**Customer's Reference** : BBMP/EE/DD/WO/361/17-18

**Source of Sample** : Sample supplied by Agency

**Sample Condition** : Satisfactory

**Date of Receipt** : 05-04-18

**Sample ID No** : 2018-04-05-07 /01

**Customer ID** : C C Pavement

**Sample Type /Size** : 150X150X150 mm

**Sample grade/Age** : M30 / 7 Days Compressive Strength

**Reference to BIS codes** : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

**Date of test** : 09/04/2018

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength ($N/mm^2$) | Average Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | C C Pavement | M30 | 02/04/2018 | 09/04/2018 | 150.23 X 150.44 X 150.35 | 22601 | 8.205 | 567.3 | 25.1 | 25.6 |
| 2 | C C Pavement | M30 | 02/04/2018 | 09/04/2018 | 149.63 X 151.34 X 150.74 | 22645 | 8.243 | 591.0 | 26.1 | |
| 3 | C C Pavement | M30 | 02/04/2018 | 09/04/2018 | 149.72 X 151.72 X 150.36 | 22716 | 8.175 | 581.5 | 25.6 | |

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R KARTHIK RECHAN
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Format No: CP/TF/01

# TEST REPORT OF CEMENT CONCRETE CUBES

**Lab ID** : **CP-2018-04-05-07** **Date: 30/04/2018**

**Customer** : Assistant Executive Engineer, Dasarahalli Sub Division, BBMP, Bangalore.

**Address** : Dasarahalli Sub Division, BBMP, Bangalore.

**Project Name** : Improvements to CC road and drain at 10th Cross and other cross road Bagalagunte main road in ward No.14, Bagalagunte.

**Agency** : Technical Manager (West), KRIDL, Project Implementation unit, No.280, 59th Cross, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore.

**Customer's Reference** : BBMP/EE/DD/WO/361/17-18

**Source of Sample** : Sample supplied by Agency

**Sample Condition** : Satisfactory

**Date of Receipt** : 05-04-18

**Sample ID No** : 2018-04-05-07 /02

**Customer ID** : C C Pavement

**Sample Type /Size** : 150X150X150 mm

**Sample grade/Age** : M30 / 28 Days Compressive Strength

**Reference to BIS codes** : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

**Date of test** : 30/04/2018

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength ($N/mm^2$) | Average Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | C C Pavement | M30 | 02/04/2018 | 30/04/2018 | 149.11 X 151.23 X 149.65 | 22550 | 8.159 | 728.4 | 32.3 | 32.2 |
| 2 | C C Pavement | M30 | 02/04/2018 | 30/04/2018 | 150.37 X 15.42 X 150.63 | 2319 | 8.176 | 73.7 | 31.8 | |
| 3 | C C Pavement | M30 | 02/04/2018 | 30/04/2018 | 150.49 X 150.11 X 150.47 | 22590 | 8.205 | 731.9 | 32.4 | |

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